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[54] **INTELLIGENT QUERY SYSTEM FOR AUTOMATICALLY INDEXING INFORMATION IN A DATABASE AND AUTOMATICALLY CATEGORIZING USERS**

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[58] **Field of Search** 707/2, 10, 102, 707/532, 3; 704/9, 241; 382/159; 345/440

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[57] **ABSTRACT**

An Intelligent Query Engine (IQE) system automatically develops multiple information spaces in which different types of real-world objects (e.g., documents, users, products) can be represented. Machine learning techniques are used to facilitate automated emergence of information spaces in which objects are represented as vectors of real numbers. The system then delivers information to users based upon similarity measures applied to the representation of the objects in these information spaces. The system simultaneously classifies documents, users, products, and other objects. Documents are managed by collators that act as classifiers of overlapping portions of the database of documents. Collators evolve to meet the demands for information delivery expressed by user feedback. Liaisons act on the behalf of users to elicit information from the population of collators. This information is then presented to users upon logging into the system via Internet or another communication channel. Mites handle incoming documents from multiple information sources (e.g., in-house editorial staff, third-party news feeds, large databases, World Wide Web spiders) and feed documents to those collators which provide a good fit for the new documents.

48 Claims, 23 Drawing Sheets